

**MARKED-UP VERSION OF THE AMENDED CLAIMS:**

1. (currently amended) Structured mixing shaft (1) for thorough mixing and comminution of food products in an assembly (2) comprising a steel core (3);  
a coating (6) furnished to the steel core (3);  
mixing elements (4) associated homogeneous with the coating (3),  
wherein the steel core (3), the coating (6), and the mixing elements (4) form a structured mixing shaft (1) and wherein the coating (6) and the mixing elements (4) consist of the same plastic material.
2. (currently amended) Mixing shaft according to claim 1 wherein the coating (6) is a poly- tetra fluoro- ethylene (PTFE) and covers the complete mixing shaft (1) and wherein the mixing elements are made of poly- tetra fluoro- ethylene (PTFE).
3. (currently amended) Mixing shaft according to claim 1 wherein the steel core (3) is made of stainless steel and wherein the stainless steel core (3) has a bore hole (17) in a middle, wherein a bolt (18) having a thread is guided in

the bore hole (17), and wherein the mixing shaft (1) is pressed with a thread and with a screw (16) against a working tool.

4. (original) Mixing shaft according to claim 1 wherein an elongated section (7) is furnished, and wherein a flange (8) is arranged at one end of the elongated section (7).

5. (currently amended) Mixing shaft according to claim 7 [[1]], wherein mixing elements (4) are disposed at predetermined distances (A) on the elongated cylindrical section (7).

6. (currently amended) Mixing shaft according to claim [[1]] 7 wherein mixing elements (4) are disposed at irregular distances (A) on the elongated cylindrical section (7).

7. (currently amended) Mixing shaft according to claim 1, wherein [[the]] a cylindrical elongated section (7) is disposed in an elongated product chamber (9).

8. (original) Mixing shaft according to claim 6 wherein at least one injection nozzle (11) is disposed at the product chamber wall (10).

9. (currently amended) Mixing shaft according to claim 1, wherein the plastic coating (6) [[is]] and the mixing elements (4), are pressed on isostatically at high pressures, then [[is]] are sintered at high temperatures and in the following are worked by metal cutting and machining away.

10. (previously presented) Mixing shaft according to claim 1, wherein the surface of the plastic coating (6) is polished.

11. (previously presented) Mixing shaft according to claim 1, wherein the complete surface of the steel core is roughened.

12. (currently amended) Mixing shaft according to claim 1, wherein the plastic coating (6) [[is]] and the mixing elements (4) are sintered at temperatures from about 360 degrees centigrade to 380 degrees centigrade after the isostatic pressure application.

13. (currently amended) Mixing shaft according to claim 1, wherein the mixing elements (4) are integrated with the coating (6) and are a component of the coating (6).

14. (currently amended) Mixing shaft according to claim 1, wherein the cylindrical section (7) of the steel core (3) of the mixing shaft exhibits elongated grooves (12) and elongated projections (13), wherein the corners (14) and the edges (15) of the elongated grooves (12) and of the elongated projections (13) are formed rounded and wherein the coating (6) of the steel core (3) covers the complete steel core (3) including a connection flange and wherein the coating (6) prevents any contact of the steel core (3) with a product to be mixed applying a coating (6) [[with]] and mixing elements (4) consisting of the same plastic material onto the structured surface of the steel core (3) at isostatic pressure (p) and at increased temperatures (T).

15. (currently amended) Mixing shaft according to claim 1, wherein [[the]] widths of [[the]] grooves of the steel core (3) and of [[the]] projections (13) of the steel core (3) are of approximately equal size.

16. (currently amended) Method for the production of a coating (6) and of mixing elements (4) on [[the]] a structured surface of a steel core (3) of a mixing shaft (1) for thorough mixing and comminution of food products in an aggregate (2) comprising

applying a coating (6) [[with]] and mixing elements (4) each consisting of the same plastic material onto the structured surface of the steel core (3) at isostatic pressure (p) and at increased temperatures (T) with the aid of a processing method for the application of poly-tetra fluoro ethylene onto surfaces.

17. (currently amended) Method according to claim 16, wherein the plastic coating (6) [[is]] and mixing elements (4) are pressed on isostatically at high pressures, then sintered at high temperatures, and then in the following worked by machining away and metal cutting.

18. (currently amended) Method according to claim 16, wherein the plastic coating [[is]] (6) and the mixing elements (4) are pressed on with an isostatic pressure of about 300 bar to 350 bar onto the steel core (3) of the mixing shaft (1).

19. (currently amended) Method according to claim 16, wherein the plastic coating (6) [[is]] and the mixing elements (4) are pressed on isostatically at high pressures, then [[is]] are sintered at high temperatures and in the following are worked by metal cutting and machining away.

20. (currently amended) Method according to claim 16, wherein the plastic coating (6) [[is]] and the mixing elements (4) are sintered at about 360 degrees centigrade to 380 degrees centigrade after the isostatic pressure application.